

CLASSIFICATION S-E-C-R-E-T

CENTRAL INTELLIGENCE AGENCY

REPORT

## INFORMATION REPORT

CD NO.

25X1

COUNTRY East Germany

DATE DISTR. 30 August 1955

SUBJECT Black Phosphorus Research at the Academy Institute,  
Berlin-Buch

NO. OF PAGES 2

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THIS IS UNEVALUATED INFORMATION.

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1. Within the scope of its ~~unpublished~~ research, the Academy Institute for Research on the Physics of Solids in Berlin-Buch has started to engage in research on black phosphorus. This research is being carried out in the light of the well-known supposition, based on the crystallographic qualities of black phosphorus, that this element is a semi-conductor. The Berlin-Buch Institute has set itself the task of proving or disproving this supposition.
2. The present work of the Institute on black phosphorus goes back to research previously undertaken by Professor Otto Neunhoeffer during World War II. At that time, Neunhoeffer was working at Breslau University where he carried out experiments aimed at the preparation of black phosphorus from yellow phosphorus through the application of high pressures and temperatures. Neunhoeffer's Breslau experiments were, in principle, based on experiments carried out by Bridgeman in the twenties. The latter had produced black phosphorus by applying hydraulic pressure to yellow phosphorus in oil. Neunhoeffer's Breslau experiments differed from Bridgeman's method in that Neunhoeffer did not use hydraulic pressure and also used no oil. He put yellow phosphorus into a silver crucible covered with a lid, and, with the aid of a steel stamp, applied pressures of around 120° Centigrade. Neunhoeffer was assisted in Breslau by a laboratory technician, Paul Geselle. When later on Neunhoeffer became head of the Chemical Department of the Academy Institute in Berlin-Buch, Geselle was working at Greifswald Observatory as master foreman. In the spring of 1954, Neunhoeffer initiated black phosphorus research in the Berlin-Buch Institute. He applied to the Academy for permission to charge Geselle with the special task of making black phosphorus in Greifswald on the basis of the experiments which Neunhoeffer and he had carried out together during the war in Breslau. After Neunhoeffer was transferred from the Berlin-Buch Institute in order to take over the direction of the Institute for Organic Chemistry of Humboldt University in Berlin, Geselle started to produce black phosphorus as required. During the spring of 1955, small amounts of black phosphorus were delivered from Greifswald to the Chemical Department of the Berlin-Buch Institute.

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3. The Chemical Department Institute has been headed since 1 October 1954 by Kurt-Werner Paetz, who is not a scientist but was previously employed in a metallurgical enterprise in Plauen. It is not known for what reasons he was selected to head the Chemical Department, where the post of chief had been vacant since Neunhoeffer's departure. However, it appears that Paetz had very good personal relations with the head of the Institute, Prof. Friedrich Moeglich, who made special efforts to obtain permission to give the direction of the Chemical Department to Paetz. In May 1955, Paetz, in [redacted] to an assembly of Academy scientists and employees, reported on black [redacted] allegedly carried out under his supervision in the Chemical Department [redacted] Berlin-Buch Institute whereas in reality this work had been carried out by Geselle in Greifswald on the basis of Neunhoeffer's and his previous work on the subject. Paetz's lecture drew the attention of the scientists present mainly through the mistakes contained in it. However, he received a premium of 1,500 DME from the Academy [redacted] of Professor Moeglich for outstanding work in black [redacted]

4. Geselle in Greifswald is continuing to make black [redacted] Berlin-Buch Institute. The next step to be taken there will be [redacted] physical and optical qualities, such as absorption, Hall effect, conductivity as a function of temperature, etc., in the Electro-Optical Department of the Institute, headed by Dr. Wilhelm Buttler. These measurements are expected to be carried out in the near future.

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CENTRAL INTELLIGENCE AGENCY

REPORT

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DATE DISTR. 10 August 1955

SUBJECT Black Phosphorus Research at the Academy Institute, Berlin-Buch NO. OF PAGES 2

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4. Gesselle in Grottsmund is continuing to make black phosphorus, for the Berlin-Buch Institute. The next step to be taken there will be to measure its electrical and optical qualities, such as absorption, Hall effect, conductivity as a function of temperature, etc., in the Electro-Optical Department of the Institute, headed by Dr. Wilhelm Ruttler. These measurements are expected to be carried out in the near future.

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